

185 36

67 Louist St.

Dated March 1828

resistant to
heat, decomposition, heat &
cold to the human body, perfectly
opium. Takes in that of all medicinal
employment
on

Opium.

by

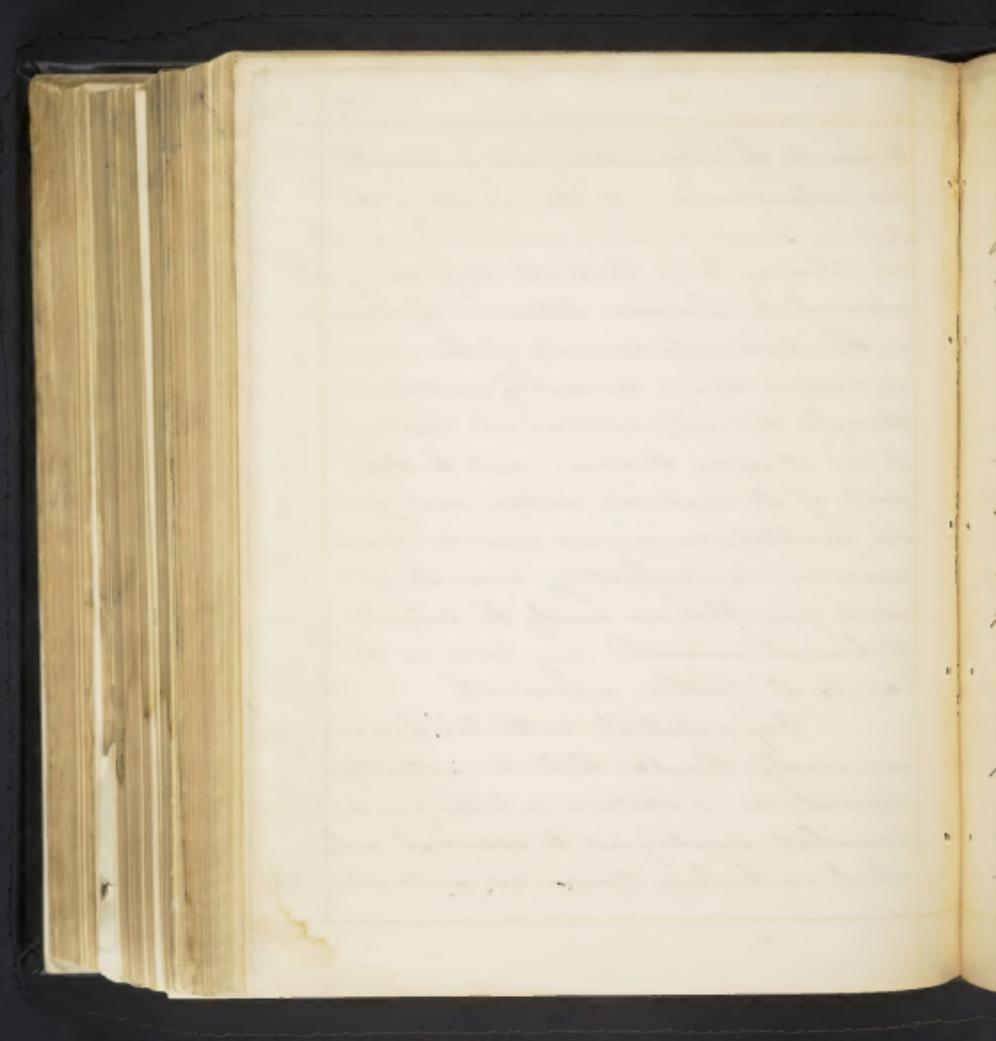
Edward Staples.

the following

Opium is the inspissated juice procured
from incisions made into the capsules of the
Poppy Somniferum, a well known annual
plant, belonging to the thirteenth class and first
order, of the Linnean Botanical System.

The historical accounts of this very
celebrated drug, are widely scattered
through the early and recent history
of the *Material Medica*; and the state-
ments of its medical virtues, and poi-
son qualities, are various, and in some
measures unsatisfactory; even its pro-
imate principles so amply the subject
of chemical research may still be the
objects of further experiments.

Very respectable authorities have
erroneously thought, that its activity
resided in a certain subtle part,
somewhat analogous to essential oils,
which on boiling Opium in water



they relate arises and may be condensed, which in doses of a few grains, has so much activity as to produce death in dogs unaffected by the common Opium in drachm doses.

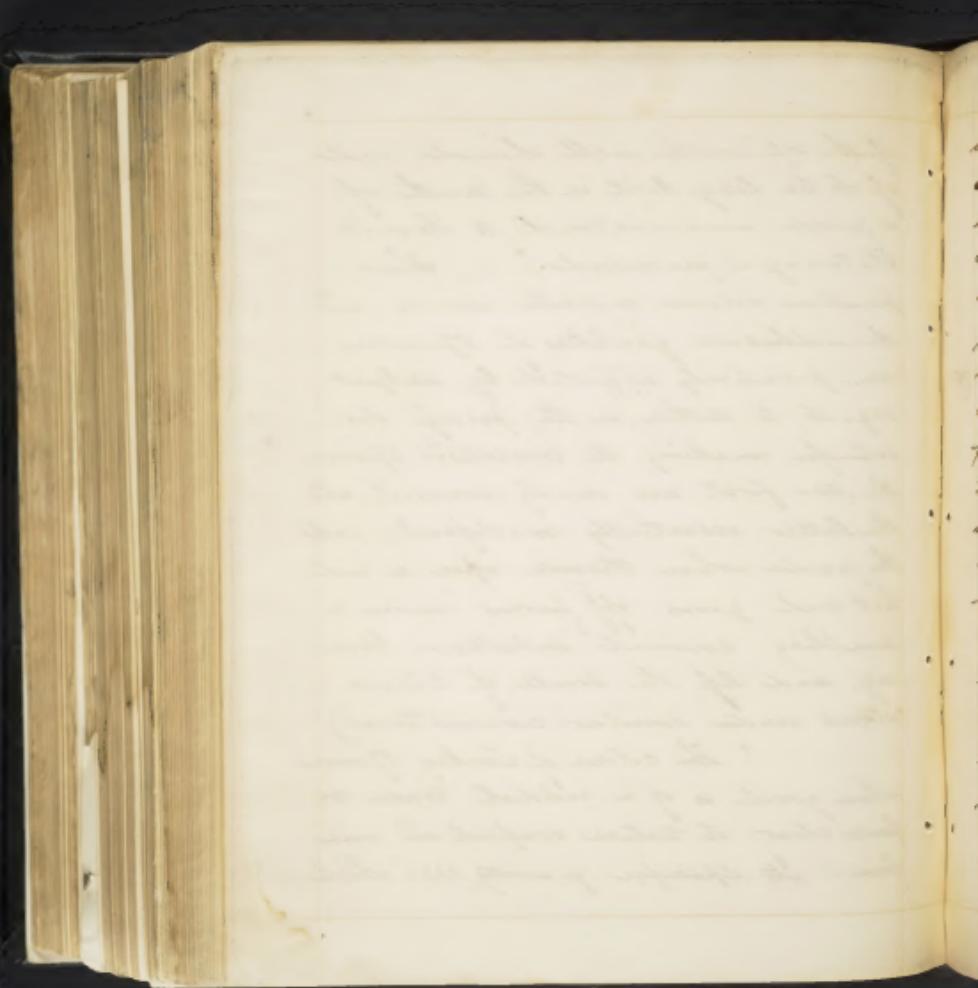
Newman has asserted that he knew a preparation of Opium, capable of producing Stupefaction, without its intended use, he fancied its action resembled the fumes of charcoal and like carbonic acid gas its baneful influence could be extended to a whole roomfull of persons.

Our supplies of Opium are obtained from India and ^{which} Turkey the latter is deservedly most esteemed. Turkey Opium has a peculiar, strong, heavy, narcotic odour, and a bitter taste which is accompanied with a sense of acrid heat, or biting on the tongue and lips

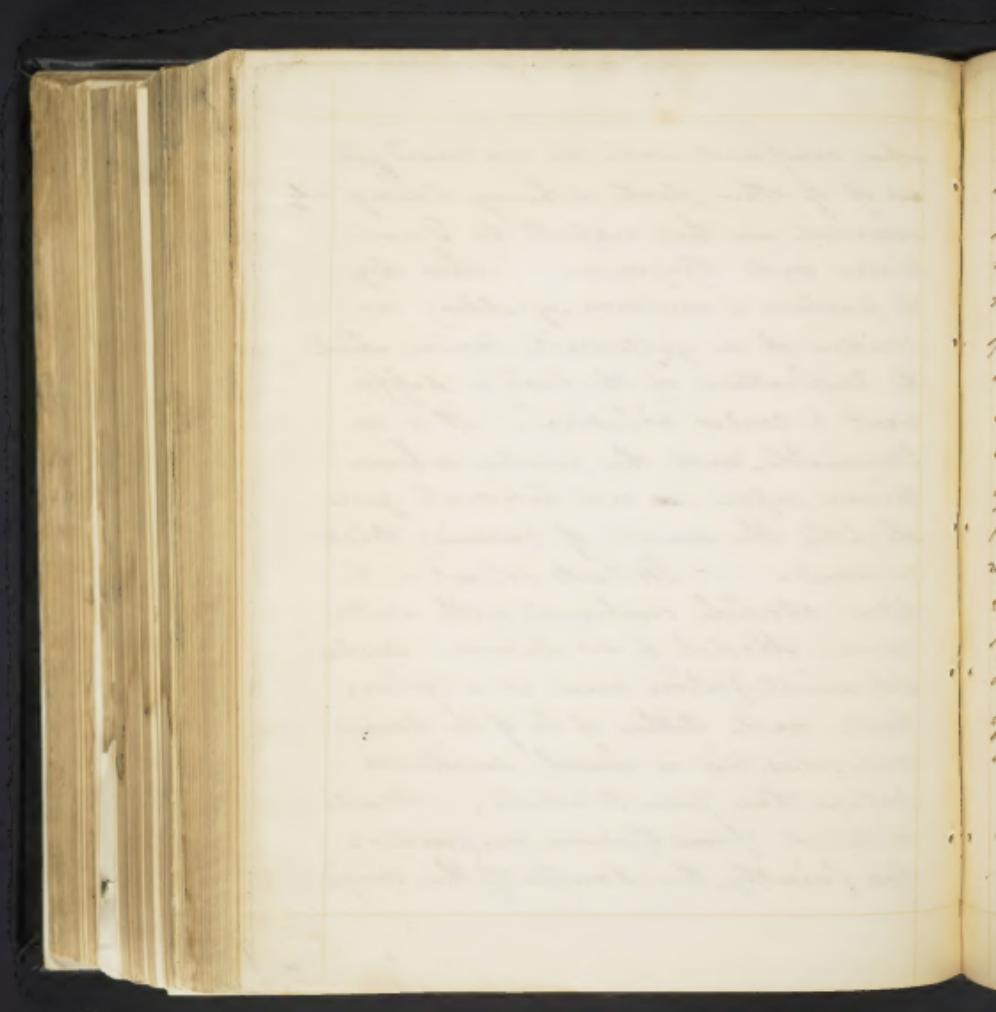


if the opium be well chewed; and
if it be long left in the mouth of
a person unaccustomed to chew it, when
bittering is produced." (The
peculiar odour, narcotic power, and
the adhesive qualities of Opium,
are peculiarly affected by subject-
ing it to either, or the process de-
vised for making de marcotised Opium;
the two first are nearly removed, and
the latter essentially modified; and
the powder when thrown upon a red
hot coal gives off fumes more re-
sembling animal substances burn-
ing, and less the smell of tobacco
stems under similar circumstances.)

" The colour of Turkey Opium
when good is of a reddish brown or
fawn colour; its texture compact and uni-
form. Its specific gravity 1336 which



when compared with the condens'd jui-
ces of other plants, is heavy being only
exceeded in this respect by Gum
Arabic and *Opopanax*. When dry
its fracture is uniform, yielding a
powder of a yellowish brown, which
the temperature of the hand is suffi-
cient to render adhesive. It is in-
flammable, and the powder when
thrown upon a red hot coal gives
slightly the smell of burning tobacco
or stems. Its best solvent is di-
luted alcohol combined with acetic
acid. Alcohol of 40 Beaumis ^{about 80°} dissolves
but small portions even at a boiling
heat, and Ether of 65 of the same
scale, dissolves a much smaller
portion than pure Alcohol. Water
distilled from Opopanax in powder,
has faintly the smell of the drug



Alcohol of 440 distilled under
the same circumstances, as when
gas and without heat, when
however, ammonia is combined with
the water, or else 2, the odour is
peculiar, and, except the in water,
the water, and in various distilla-
tions.

In 1803 M Durose
described a salt obtained from
opium, which has since been sub-
posed to be the miconate of Morphia,
more recent assisted by M Robiquet
it is a crystallized. In Seguin in
1804, describes a crystalline body
in opium, and described most
of its properties without having been
aware of its analgesic qualities.

M Sertürner first announced
in 1807 Morphia as an alkaloid
was extracted, his negotiations



o. 1. 1. 0 by ammonia, were never
able to be dissolved in diluted
sulphuric acid, and as it was
precipitated by ammonia, in order
to remove the colouring matter, which
was not entirely extracted, without
the aid of alcohol, and the salt
at last described as a coloured
substance. From the research
es of these gentlemen, and those of
Mr. Robiquet it is asserted that
Opium is composed of 1st, a fixed
oil; 2nd of matter analogous to cast
aceous, 3rd of a vegetal animal substance;
4th of mucilage; 5th, of a fecal or
matter; 6th, of resin; 7th, of the
remains of vegetable fibre; 8th, of
narcotine; 9th, of meconic acids;
10th, of an acid discovered by Mr.
Robiquet; and 11th of Morphine.



The several ingredients contained in Opium
are supposed to be inert with the
exception of Narcotine and Mor-
phine. The meconic acid is only
interesting in consequence of its co-
action with Morphine existing
in opium as the solvent of this
substance.

Narcotine may
readily be obtained from Opium, by
the repeated use of Ether, which
dissolves besides that substance a
portion of the matter analogous to
Cocathone, by removing the Ether
by distillation, acting upon the mass
left in the retort with strong alcohol,
allowing crystals to form, washing
them with oil of turpentine, and re-
dissolving them in strong alcohol, pure
narcotine may be obtained as crys-
tals, of nearly a snow white.



The quantity of camphor, in opium,
is inconceivable, when compared with
many vegetable substances. Seven
hundred and sixty one grains
were subjected to eight times the
bulk of oil of turpentine, for sever-
al days, at a temperature above se-
enty, only sixty four grain were dis-
solved. The Narctine, when pro-
duced from the same Opium was
destitute of the substance resembling
camphor always produced when
ether is the first solvent. Of
the most important substance derived
from Opium Morphia - Having
tried with unsatisfactory results the
processes detailed by Magendie and
others I have endeavored to form
a formula founded upon experi-
ments made upon a small scale

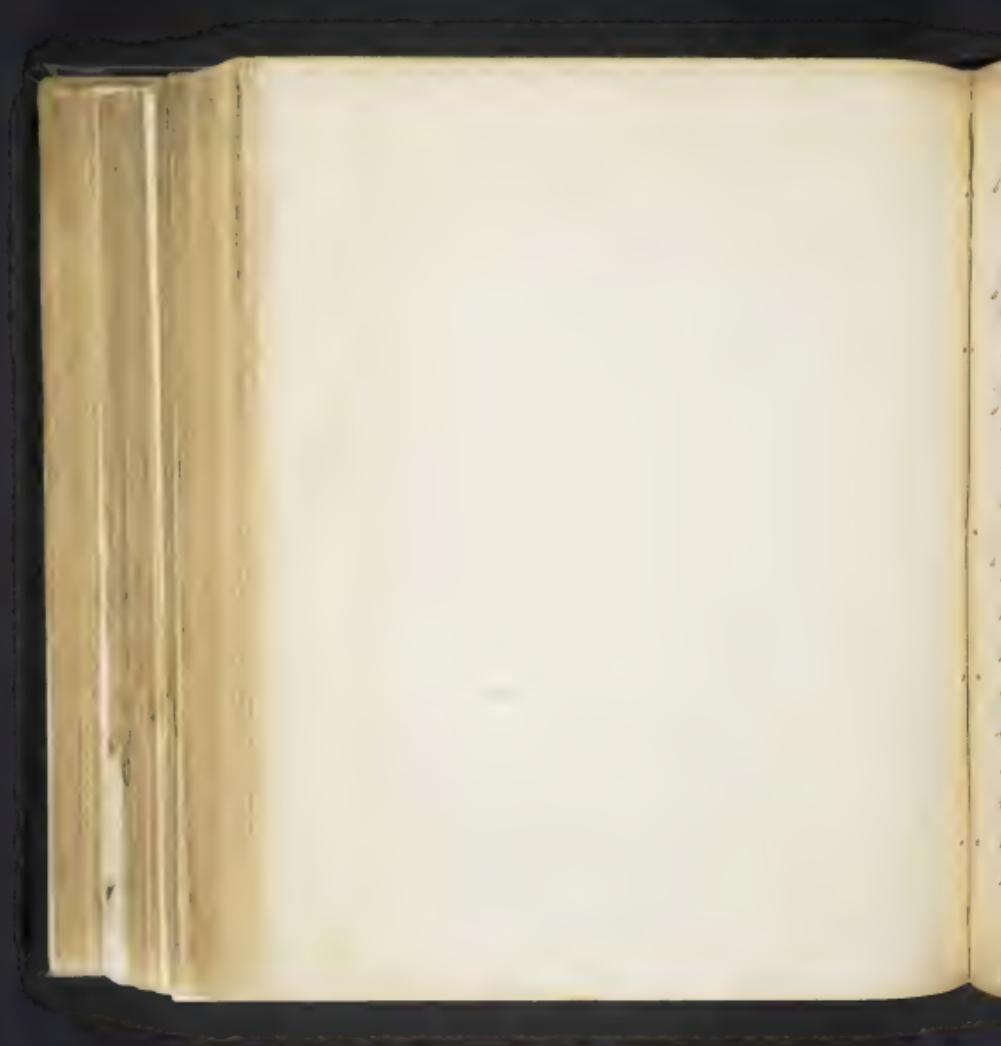


in which I succeeded in procuring
the article in a crystalline form
by the first precipitation - The re-
sult of these experiments induced
me to continue the - and a great
success, the having used a min. quantity
of salt with the water no colour
detected and as my other attempts
had failed to do so I have
nothing now to do with the
salt water. The first salt
obtained will be sent to you
as soon as I get a specimen
which I am well pleased with
but I am not yet in a position
to answer to your inquiries
as to the nature of the mineral
or part of the mineral.

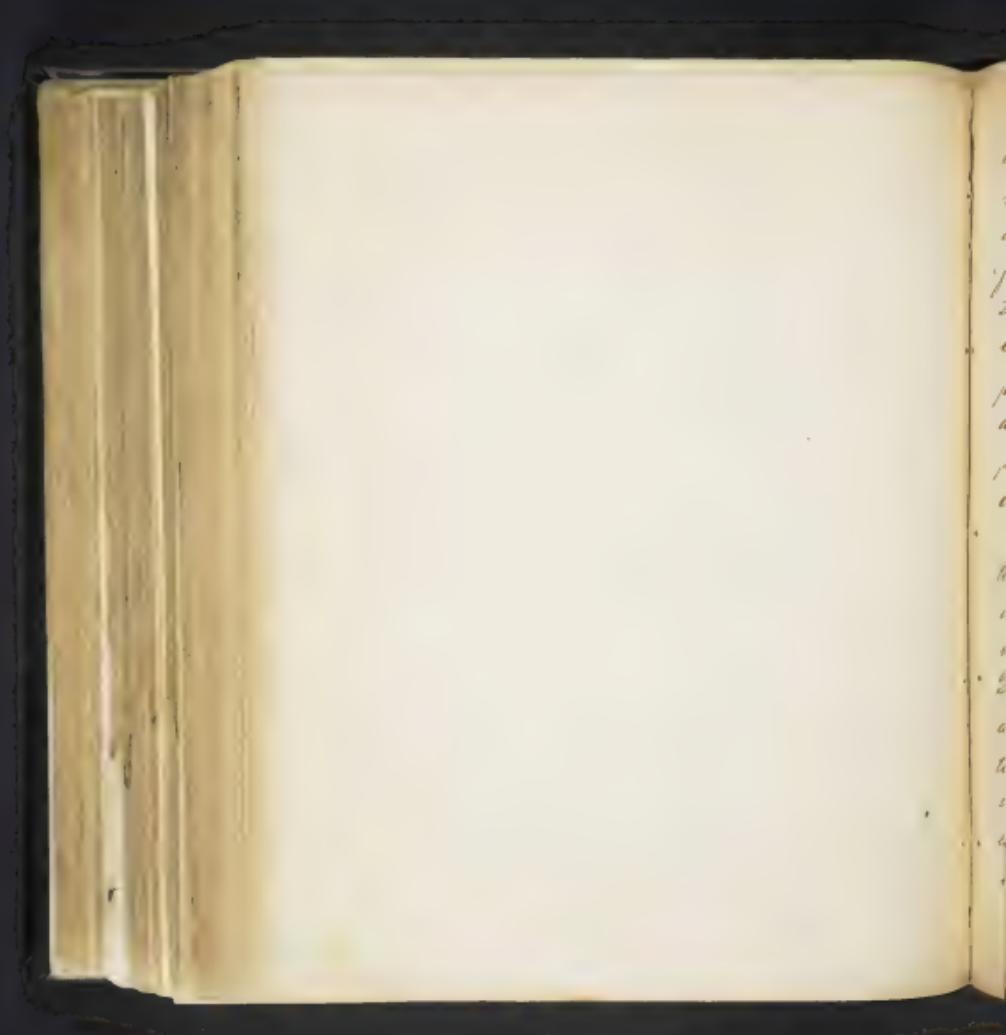
Some time ago by a
well known mineralogist



of three ounces of strong acetic acid
and an equal quantity of pure water;
or twenty four hours to a temperature
over 50° Fahrenheit after which eight
ounces of Alcohol of 55 Beaumes (the
specific gravity, about .835) are to be ad-
ded, and as, after digestion, sufficient
of six or eight hours, in a room at
temperature, the heat of the solution
then to gradually raised by means
of a water bath to 160° Fahrenheit, and
after having remained at that heat
as short time to be thrown upon
a iron 5° Fahrenheit, has the above
vessel continued to no longer 3/4 an hour
facilitating filtration by heat as well
as in other stages of the process may
be used with great advantage) the
undissolved portion of Gypsum, is then
to be subjected to a similar portion



of acetic acid and water as before,
adding alcohol, suspending digestion;
and raising the temperature, as be-
fore, and the second solution having
been thrown over the Glomeri Strata
so, soot is to be well pressed while not
finer than the diameter of the Opium. The
two slightly, colored acidulous tinctures,
may be mixed and all the transpa-
rent liquor be decanted, subjecting to
filtration, only the small portion which
always scatters after straining. All
the transparent liquor by the two ex-
haustions should now be placed in a
suitable glass, which has precipitation
which is to be effected by Ammonia
in Alcohol, added with so much ca-
tion that no apparent disturbance
takes place, this may best be done,
through the medium of a glass tube



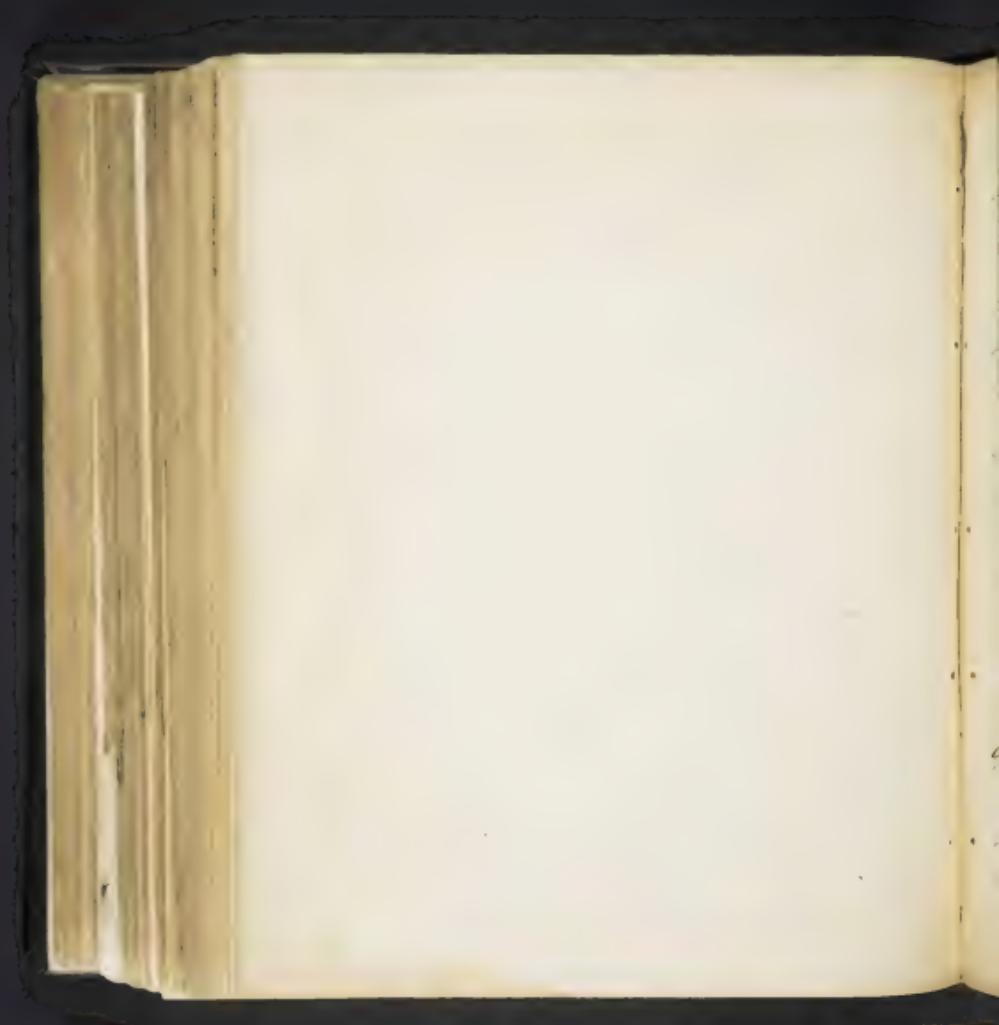
extending to the bottom of the vessel,
the specific gravity of the ammonia
and Alcohol ensuring its more uni-
form diffusion throughout the men-
struum; when introduced at the
bottom, the proper strength of the
precipitant is also more readily
ascertained, if turbidity is ap-
parent at the end of the tube the
alkali is not sufficiently diluted.

The ammonia is to be added from
time to time until the acetic acid
is saturated, this to be determined
by the appropriate test or even the
small relied upon as a sufficiently
accurate indication; after Satura-
tion, the solution should be placed
in a cool situation, exposed to the
light, the crystals will soon begin
to form, and in the course of a



few days, nearly all the Morphia will have receded from the solution, especially if the weather is favourable.

The crystals which consist principally of Morphia, should be collected and washed, in a small portion of warm water, or cold diluted alcohol, in either case, returning the slightly coloured washing, to the solution from which the crystals were obtained, after which they may be set aside to await the result of evaporating the extract, or may be immediately subjected to the action of boiling alcohol of 35° from & when cold the Morphia will subside in crystals of silky white. The solution containing the colouring matter and other substances found in Opium now deprived of nearly all its



Morphia, may be submitted to dis-
tillation in a water bath, permitting
the liquid to cool when reduced
one third, in order that more crys-
tals may form should Morphia still
remain in solution, and it may
be well to suffer the liquid to
cool at another part of distilla-
tion, for the same purpose. It will
however, be found that nearly all
the morphia recedes from the first
solution in the first precipitation.

The residue of the solution, may
be evaporated in a water bath,
and the extract of Opium deprived
of Morphia be form'd. The yellow
pigment appears to be the rationale of
the process. Opium is presented
in solution, in its best solvent di-
luted alcohol the power of which,



is much evoluted by heat and acetic acid, (from which pure aqua ammonia, would produce the precipitation or separation of the ingredients, or, (shown in a very unrefined manner) combined with alcohol the most soluble portions are still retained in the solution) by its aid while the uncombined Morphia, but little soluble in pure alcohol and less so when alumuring matter is present, recedes gradually from the solution.

Experimental illustration. Four ounces of coarsely powdered Opium was twice acted upon by the heated menstruum in the manner detailed on the first trial 868 grains were dissolved, on the second 350 grains from each separately Morphia was obtained, the result 80 grains of pure



Morphia and 10 grains of iuine,
An extract was then formed, con-
taining all the ingredients of Opium,
except Morphia, of the consistence
and colour of pitch. A young
gentleman repeated the experiment,
and obtained from a similar por-
tion of Opium, one drachm and
sixty nine grains, he submitted
the Opium to longer digestion, and
was aided by cool weather while
my experimental was made in the
warmest season. ²

I think there is reason to believe, that
the process can be further modified
by using the powerful agents heat
and acid, and the cautious addi-
tions of Alkali, that by merely redi-
cting the solvent power of the merstu-
-rum, without even saturating the



acid, the Morphia will recede),
acetic acid seeming to dissolve
the colouring matter, in preference
to saturating Morphia. From a
very strong acetic tincture crystals
have formed after cooling. The
formula however as detailed, is
uniform in its production, and can
easily be reduced to practice; it
seems to me particularly suitable
to Physicians situated at a distance
from large Cities, who occasionally
may meet with persons, who from
idiosyncrasies cannot with safety,
take any of the usual prepara-
tions of Opium; following its details
the Morphia may be produced on
a very short time, even from a
fraction of Opium, the process
of chemistry in the Divulged.



has reduced the mother from the common tertian fever, from the acetic acid, and with the common vinegar & the warme oil, as I said, it may sometimes be made with certainty inutility, although it is with a moderate, or small, as when all the directions of the formula are observed. The utility of the formula, as a test of the quality of Opium, will render it simple, & of great interest to the Pharmacists, its application to the examinations of this article; & see Opium should that article be again either simply, or in combination, go before the publick, is very appropriate. With regard to its chemical characters, & mode



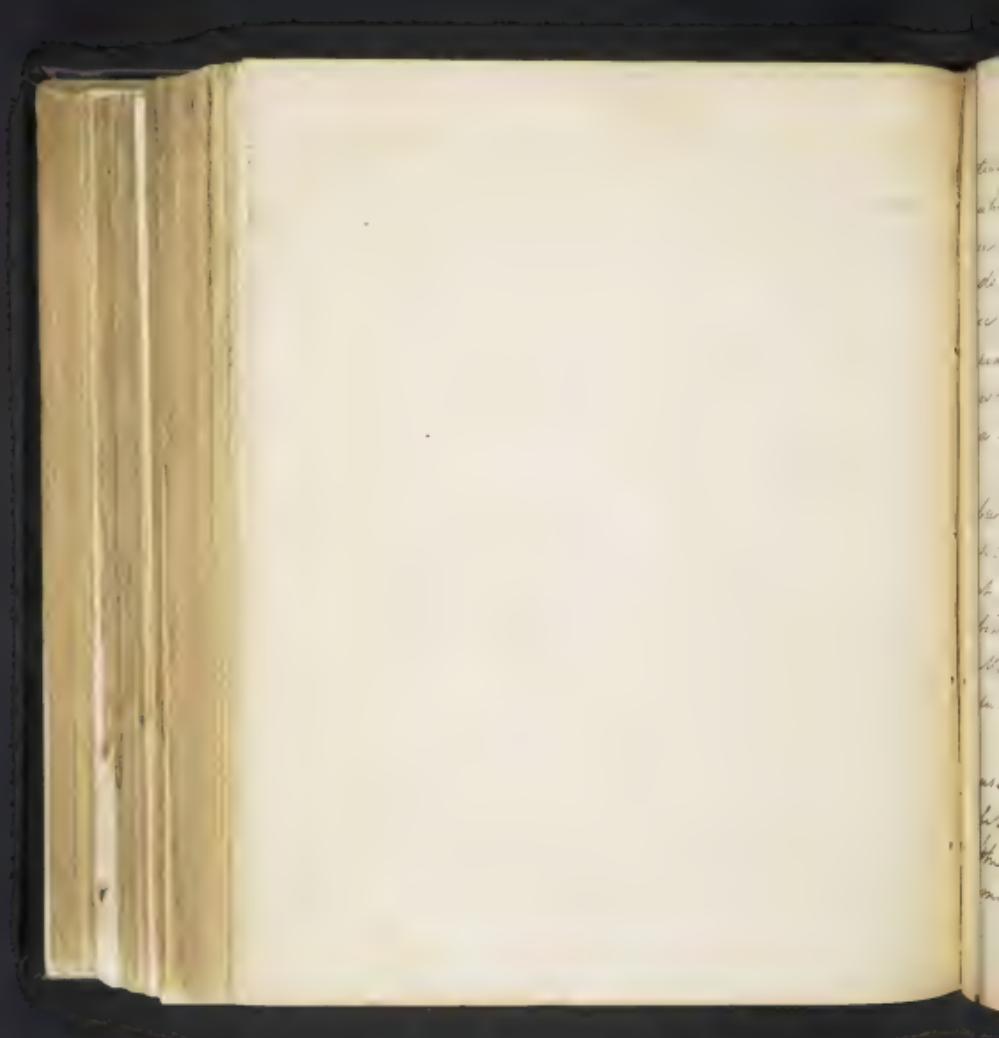
re objected, that the removal of
any alcohol as a solvent, is to
first, draw, & to exclude the
water addition; this I think will
be found incorrect when it is
considered that every process known
renders alcohol necessary to re-
move the coloring matter from
the precipitate, and this is accom-
plished with so much difficulty
as that professor Thompson recom-
mends, the use of charcoal for
the purpose, the Morphin will
inevitably be entangled in this
substance and require boiling
alcohol again and again to
remove it. If all the various
washings, and solutions in al-
cohol, which preceded the pre-
cipitation, by the usual



methods, are considered the safer
and will scarcely interfere
at. against its use in the most
instances.

The quantity of
ammonia, will be less than is
usually required, and the portion
beyond saturation will be re-
claimed in the alcohol distilled
from the extract.

In the
formula of M. R. i. p. j. t., it is
recommended to use an aque-
ous extract, after the manufac-
ture, ^{is} asserting, that some
of the Morphia is still retained
in solution, if the process is suf-
ficiently conducted with water to
hold all the Morphia in solution
this must be a tedious and expen-
sive process, and attended with some
danger of increasing the original sol-



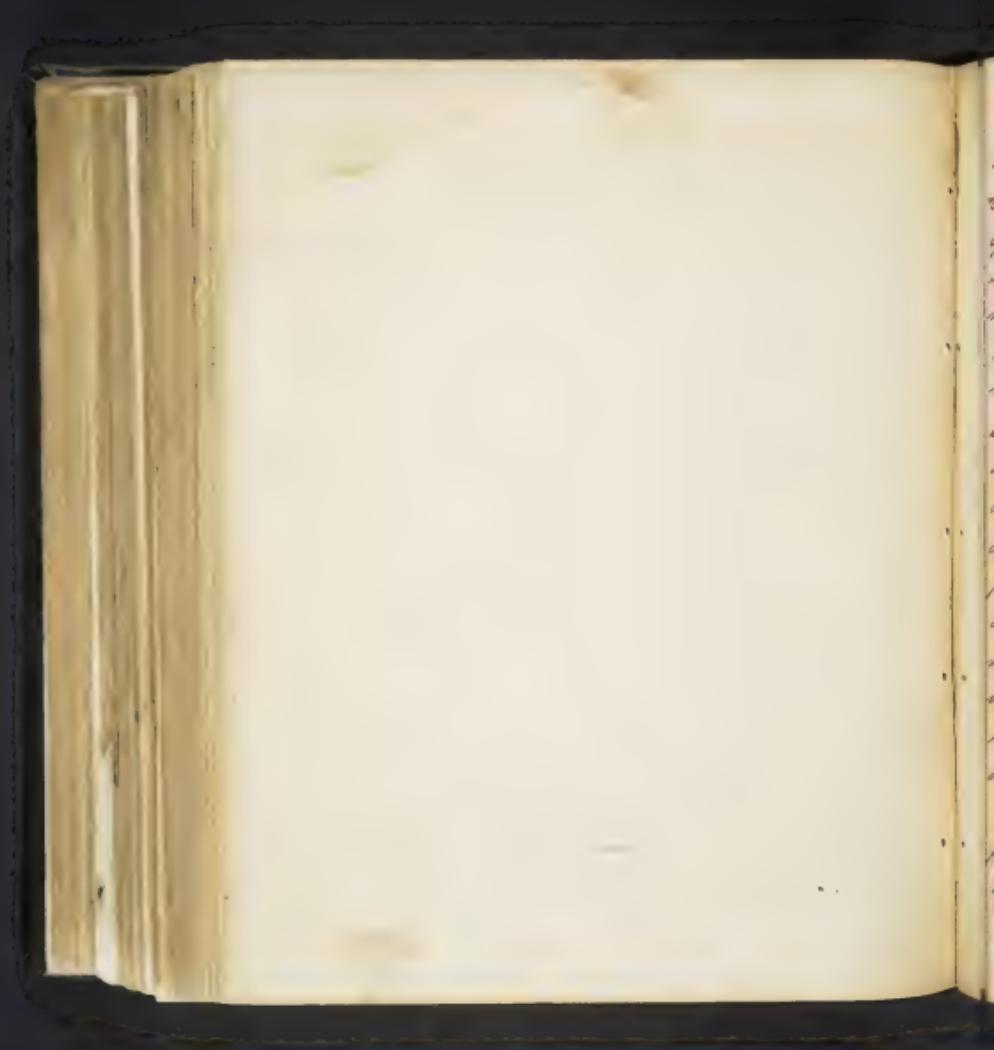
ties of the extract. The extract which is the liquid of the plant now in decoction, will be far more condensed and bitter, in an alcohol it is insipidum, will receive the addition of much $\text{C}_2\text{H}_5\text{OH}$ but then will be insipidum, to draw off a similar quantity of water.

The Acetic acid seems peculiar on account of its acknowledged volatile power of vegetable substances, it will form in the extract, in combination with ammonia, the Nitrous Mendorium, a solid and volatile substance.

Describing on the use of Opium a distinguished physician observes "of all the articles of the Materia medica, this is the most extensively useful, then being



searched one morbid affection, or an
ordain'd condition, in which, under
certain circumstances, it is not contrain-
dicated either alone, or in combination.
"Concerning the operation of Opium,
medical sentiment continues to be di-
vided, though the preponderance is
decidedly in favour of its stimulant
properties and with such an im-
pulsion it is employed." "Exhibit
ed internally, in an adequate dose,
Opium produces the following changes
in the vital functions. The pulsations
of the heart and arteries are first
markedly quicker, fuller, and stronger,
and afterwards slower than at the
time of taking it. With the increase
of frequency in the pulse, the heat
of the body is generally somewhat
augmented. The respiration is little



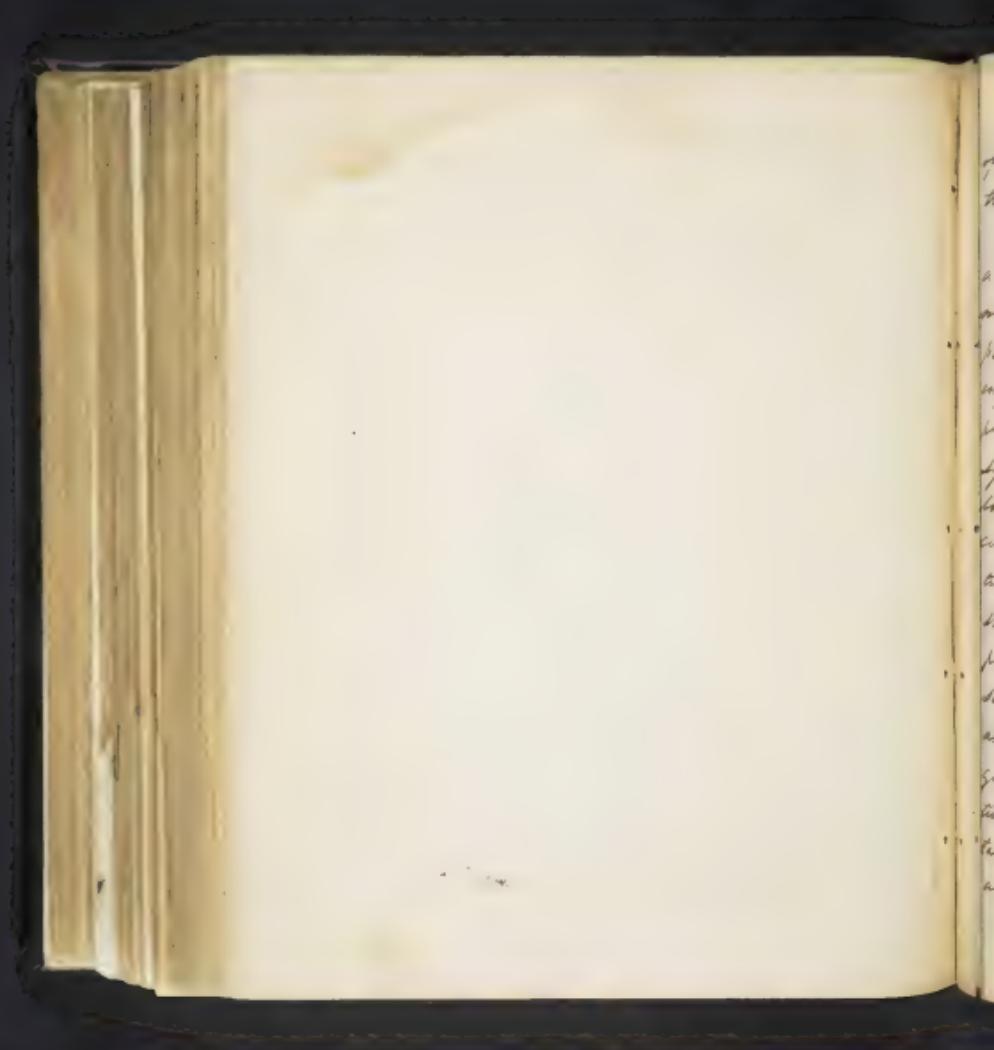
affected, except a large dose has been taken towards the conclusion of the operation of which, it becomes slow, tiresome and laborious. The natural functions are thus disturbed. The appetite and digestion from unusually large, or frequently repeated doses are generally impaired, and vomiting often induced; the discharges from the intestines are diminished or suppressed, secretion and excretion are impeded in every part of the body - except the skin, the discharge from which is evidently augmented, sometimes preceded or attended with a sense of prickling or stinging of the skin terminating now and then in a species of milky eruption."

The animal functions are affected as follows. The solarity of the moon is by degrees augmented, and continues to



increase of the dose be continued until the delirium of intoxication is produced, which, as when resulting from Spirituous liquors is attended in different constitutions with different symptoms. It is, however, more generally productive of a pleasant and joyous state of the mind than the contrary and, in many it increases the sexual propensity. These effects continuing for some time are succeeded by others of a very opposite character - the mind becomes gradually dull and languid there is aversion to motion, obtuseness as to impressions and inclination to sleep -

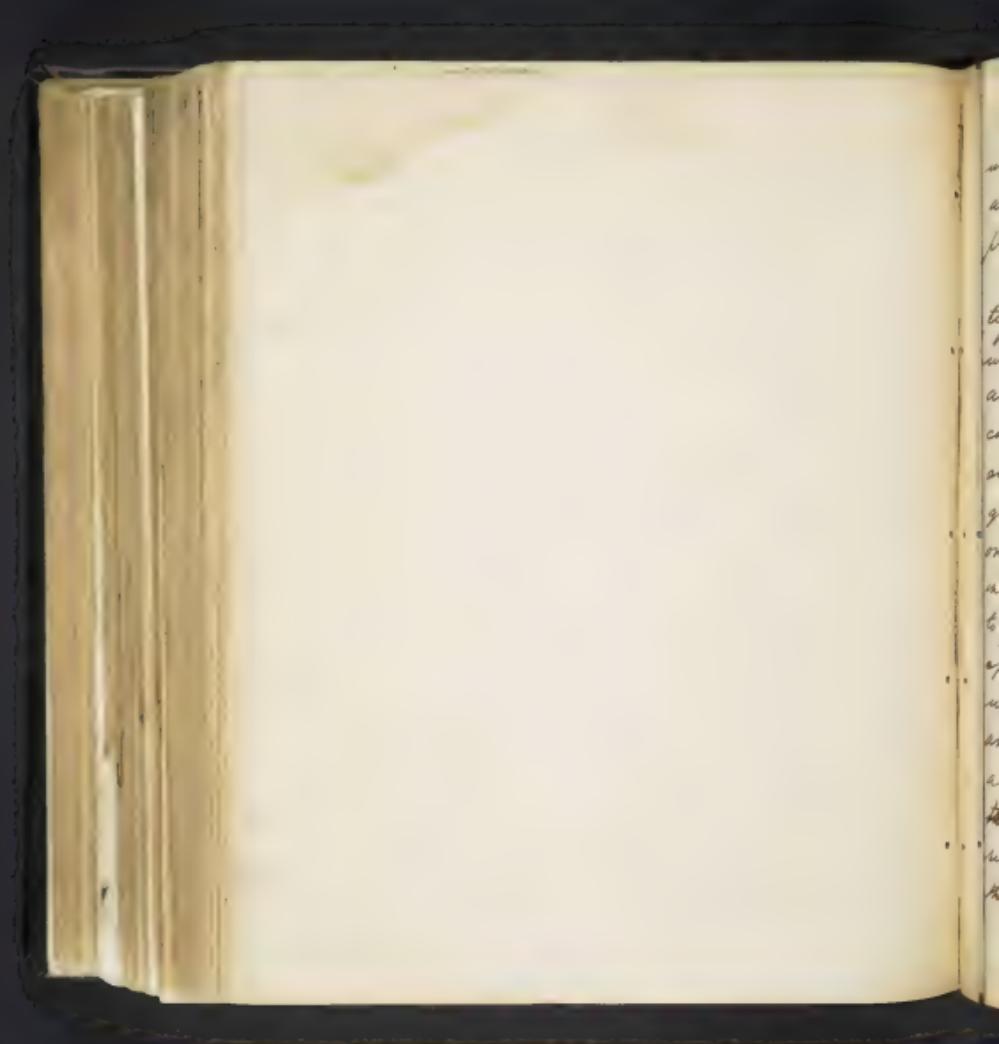
The Turks resort to its use to inspire courage, to soothe sorrow, or dissipate misfortune; to allay the demands of hunger during their feasts, and to supply the place



of stimulating liquors common in
countries where a different religion prevails.

Opium may be used with great
advantage in Intermittents, if at
administered about an hour before the
paroxysm, and even according accord-
ing to Lind, in the hot stage, this
practice may be injurious when the
system is plethoric and inflammatory
but highly beneficial under opposite
circumstances -

Its use in con-
tinued fever and in pneumonia,
should be preceded by suitable de-
pletory measures; in the former it is
sometimes useful in the advanced stages
as a stimulant, in small doses at re-
gular intervals, and in larger por-
tions, when our object is to allay irri-
tation; in the latter after general
and local bleeding, and blistering,



when the cough is productive of phlegm and stridor, opium may be employed with safety and advantage.

Sanson used opium in mortification of the lower extremities, with manifest advantage, as soon as pain ceased and sleep was procured, the line of separation became evident. Doctor Garrison found great advantage, from the use of an infusion of opium dissolved in an ounce of Nitric acid, twenty to forty drops produced salutary effects, in consumption, when the usual preparations were unavailing, and the Nitric acid alone was also without effect. In tetanus the use of opium is our chief reliance, the amount demanded in this disease, as well as in Malaria, etc.



is often very large, in the later
disease it should be urged until
slip is the result a necessary inci-
der to cure. Since what has
been urged, as to the use of Opium,
in certain stages of almost all dis-
eases, it would only necessary to name
a few, of which I have just reported
in which its use was peculiarly
appropriate. It remains
for me, to speak of the use of that
peculiar proximate principle denomi-
nated Morphia; this substance and
its usual saline preparation may be used
in, probably, all cases as a substitute
for Opium, with all the advantage
derived from the use of that article;
and its use is especially appropriate
in all cases, when from idiosyncrasy,
the common preparations of Opium, cannot



be safely employed. The preparation
of Morphia seem also to produce very
solitary effects in surgical disease
and in Mania, with a fitful disease
to transcend the power of common Opium
the illustration of this remark as well
the use of Morphia in a few other cases
will be gathered from the subsequent
remarks, sincililarly made by Medical
friends to whom the Article has been
supplied.

One gentleman has
politely furnished me with notes of
three cases of a workman labouring
under intermitting fever. He was long
accustomed himself to the use of
strong drink, and owing to the difficult
course which his disease demanded
he was strongly tried and with de-
lusion homes. Ingot, a & c. an artist
of no note, and the author of a



Means of opinion on his condition
indicate a proverty, not less, and
the most frugality will not suffice to stop
on the present road to him. Eight nights
has rendered me, by some means un-
discoverable. Under these circumstances
you have no doubt of a man of Mr.
Phineas every hour until he leaves them
for the of a year. he then be now con-
sidered and enjoys a comfortable night
sick all his syn blood became an hor-
rible and I had no occasion to report to
the doctor. the second case was an
English gentleman who is situated in
greatly improved by the great indulgence
both in drink and meat, he had been
all of power of a slave in that of us
for two weeks before my seeing him; and
had indulged more or less, during that
time, wine, in an occasional glass



of wine, and sometimes stimulants
leads, from an unconquerable affection
of eating into fits, he had slept very
little for several nights, and the symptom
of mania, rages, were for several of the
last days of my attendance, very threat-
ening. I gave him at 8 o'clock in the
evening one fourth of a grain of Moltmann
and repeated it at 10 o'clock in just
as much doses that night than he had
in a number of nights, necessarily, I gave
him in the three subsequent evenings
one fourth of a grain at bed time al-
ways with good effect. His friend
patient was an Irishman, long used to
strong drink and hard work, he also
laboured under fever of an intermit-
tent type. As he would lie sleep without con-
sciousness of some sort I gave him half
a grain of Moltmann which not having



roduced sleep in two hours after, was
repeated. It slept well, and had seen
necessity to its employment afterwards."

Another medical friend informs me
that he has derived more advantage from
of morphia in scatica than could be
expected from opium under the same
circumstances. A medical student
whose case required some anodyne every
night, informed me that he had de-
rived the same advantage from the
use of Lemon juice, saturated with
morphia, in the small dose of three or
four drops than he formerly did from
thirty drops of Laudanum without the
disagreeable sensations experienced after
taking the latter. A gentleman
laboring under sciatica with extensive
degeneration as rapid as to require
frequent use of anodynes has for over



six months derived great advantage
from the use of Morphine; having used
over two hundred grains the dose with
which he commenced is now used and
its good effects universally experienced.
the towels on consequence of its use have
not required mordants. the other infi-
rmities of Town affected his health
and rendered him otherwise very uncon-
fortable.

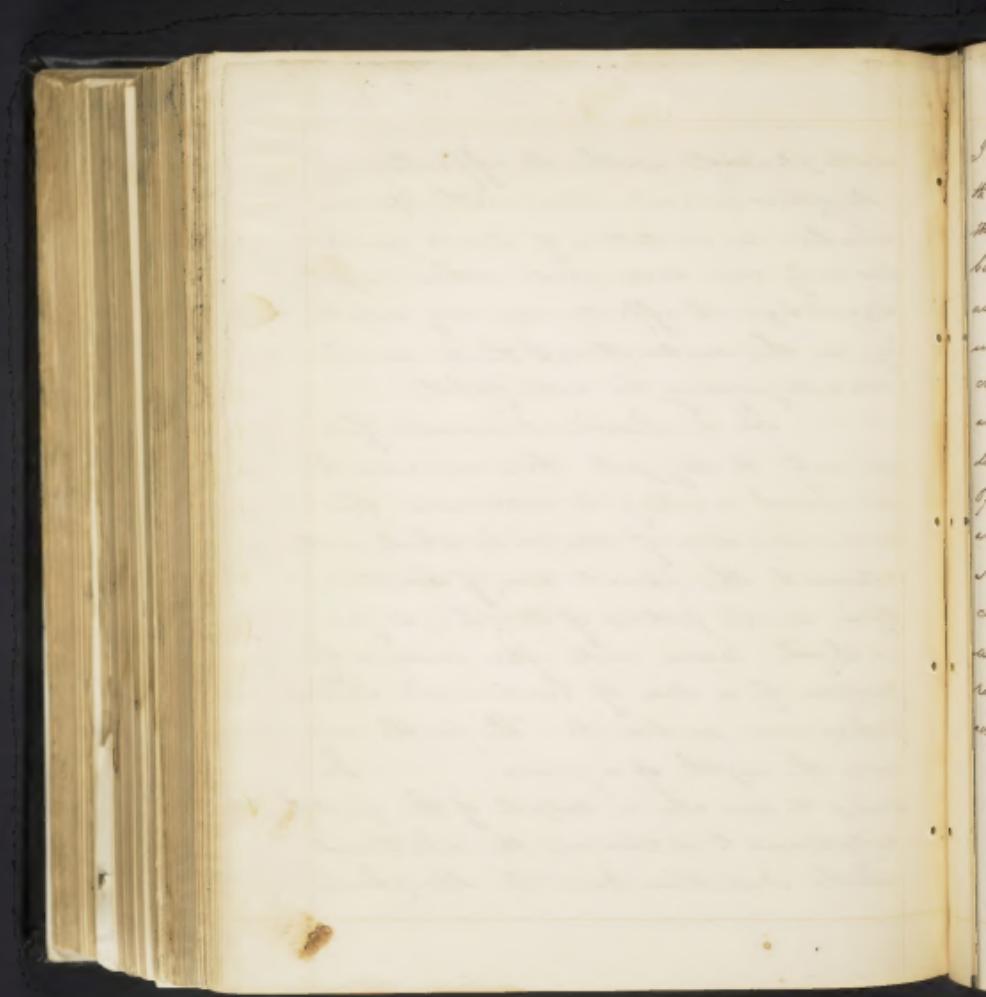
A gentleman habita-
ted to the use of Stimulants of
food and drink several times in a
state threatening mania portur for which
consulted he had been treated before
I saw him was treated with Morphine
united until complete resatrted, in evry
instance with speedy and comforta-
ble recovery. Professor Gibson used mor-
phine in the important surgical cases
this winter and I believe he was



well pleased with its effects -

Morphia in combination with Siccac
water in imitations of Siccac powder
has only once been used within my
knowledge its effects were very delicate
and in this combination I think much
advantage may be anticipated.

In conclusion it remains for
me only to suggest that experiments
are much wanting to determine the
minimum dose of Morphia which will
represent the usual dose of Sinctura
Opii, small portions of Morphia so far
as I can learn will often answer the
purpose of a dose of Laudanum. Smaller
portions even smaller than the fourth or
even the eighth of a grain. It
seems to me also a subject of the greatest
importance to determine the relation
which Narcotia bears to Morphia.



I shall not be surprised to learn
that its character widely differs from
the description drawn by M. Mayaudie
being perhaps a comparatively harmless
associate with Morphine resembling
in some degree the relation of Cam-
phorine and Brucine with their associ-
ates. This view of course will not
destroy the utility of the De Narcotised
Opium this preparation is well known
and highly commended. Other besides
Narcotiae removes a variety of substan-
ces from Opium more soluble in ether
and that substance perhaps to their
removal may be attributed its acknowl-
edged superiority over the common Opium.

